

# Index to Volume 14 (1995)

Number 1 (February) pp 1–88 Number 2 (March) pp 89–176 Number 3 (May) pp 177–264 Number 4 (June) pp 265–342

Number 5 (August) pp 343–436 Number 6 (September) pp 437–530 Number 7 (November) pp 531–608 Number 8 (December) pp 609–700

## **Article Index**

## Number 1 (February)

Arthropod pest resurgence: an overview of potential mechanisms M.R. Hardin, B. Benrey, M. Coll, W.O. Lamp, G.K. Roderick and P. Barbosa 3

Experimental air-assisted spraying of a maturing cereal crop under controlled conditions

E.C. Hislop, N.M. Western and R.

Droplet size spectra produced by the atomization of a ULV formulation of fenitrothion with a Micronair AU5000 rotary atomizer G.H.S. Hooper and P.A. Spurgin 27

Control of spruce budworm
(Lepidoptera: Tortricidae) with
Bacillus thuringiensis applications
timed to conserve a larval parasitoid
B.L. Cadogan, V.G. Nealis and
K. van Frankenhuyzen 31

Management of Helicoverpa armigera (Lepidoptera: Noctuidae) on chickpea in southern India: thresholds and the economics of host plant resistance and insecticide application

J.A. Wightman, M.M. Anders, V. Rameshwar Rao and L. Mohan Reddy 37

Colonization and control of Aphis craccivora Koch (Homoptera: Aphididae) by coccinellid predators in some resistant and susceptible cowpea varieties in Nigeria T.I. Ofuva 47

Toxicity and deterrency of depitched tall oil to the green peach aphid, Myzus persicae

Y. Xie and M.B. Isman 51
Studies on the ecology of the yellow stem borer, Scirpophaga incertulas (Walker) (Pyralidae), in deepwater rice in Bangladesh
H.D. Catling and Z. Islam 57

Use of suSCon Blue against larvae of Lepidiota picticollis Lea (Coleoptera: Scarabaediae) in Australian sugarcane and the effect of infestations on yield P.G. Allsopp, N.G. McGill and R.M.

P.G. Allsopp, N.G. McGill and R.M. Bull 69

Applying butylate- and EPTCimpregnated fertilizer to a cover crop for weed control in no-till corn, *Zea* mays, L. G.D. Hoyt 75

Effect of herbicides on *in vitro* vegetative growth and sporulation of entomopathogenic fungi *T.J. Poprawski and I. Majchrowicz* 

# Number 2 (March)

An evaluation of potential economic returns from the strategic control approach to the management of African armyworm *Spodoptera exempta* (Lepidoptera: Noctuidae) populations in eastern Africa *R.A. Cheke and M.R. Tucker* 9

Managing Botrytis cinerea on tomatoes in greenhouses in the Mediterranean Y. Elad, M.L. Gullino, D. Shtienberg and C. Aloi 105

Management of stem rot of peanuts (Arachis hypogaea) caused by Sclerotium rolfsii with fungicides W.J. Grichar 111

Damage and crop loss relationships of Helopeltis theivora, Hemiptera, Miridae and cocoa in Malaysia R. Muhamad and M.J. Way 117

Persistence of induced systemic resistance in cucumber in relation to root colonization by plant growth promoting fungal isolates M.S. Meera, M.B. Shivanna, K. Kageyama and M. Hyakumachi

Phytotoxicity of vapour phase hydrogen

peroxide to Thompson Seedless grapes and *Botrytis cinerea* spores R.E. Rij and C.F. Forney 131

Sprayed barriers of diflubenzuron (ULV) as a control technique against marching hopper bands of migratory locust *Locusta migratoria capito* (Sauss.) (Orthoptera: Acrididae) in Southern Madagascar *J.F. Cooper, G.D.A. Coppen, H.M. Dobson, A. Rakotonandrasana and R. Scherer* 137

Spread and control of potato leafroll virus in the Souss Valley of Morocco A. Hanafi, E.B. Radcliffe and D.W. Ragsdale 145

Suppression of Amaranthus spinosus and Kochia scoparia: evidence of competition or allelopathy in Allium fistulosum

C. Macharia and E.B. Peffley 15
Fungal species composition and abundance on stored corn as influenced by several management practices and maize weevil (Coleoptera: Curculionidae)
R.J. Barney, B.D. Price, J.D. Sedlacek and M. Siddiqui 159

Influence of water and nitrogen fertilizer on biology of the Russian wheat aphid (Homoptera: Aphididae) on wheat T.L. Archer, E.D. Bynum Jr, A.B. Onken and C.W. Wendt 165

Methyl anthranilate formulations repel gulls and mallards from water J.L. Belant, S.W. Gabrey, R.A. Dolbeer and T.W. Seamans 171

## Number 3 (May)

Biological control of *Rhizoctonia solani* by binucleate Rhizoctonia spp. and hypovirulent *R. solani* agents *L.J. Herr* 179 *In vitro* inhibition of *Botryosphaeria* 

In vitro inhibition of Botryosphaeria dothidea and Lasiodiplodia

theobromae, and chemical controls of gummosis disease of Japanese apricot and peach trees in Zhejiang Province, China

H.-Y. Li, R.-B. Cao and Y.-T. Mu 187

Evaluation of oil suspension emulsions of Colletotrichum orbiculare as a mycoherbicide in field trials T.A. Klein, B.A. Auld and W. Fang 193

Assessment of crop loss in cowpea [Vigna unguiculata (L.) Walp.] caused by Sphaceloma sp., causal agent of scab disease C.M. Mungo, A.M. Emechebe and K.F. Cardwell 199

Hot pepper (Capsicum spp.) production on Java, Indonesia: toward integrated crop management J.G.M. Vos and A.S. Duriat 205

Soil solarization, summer irrigation and amendments for the control of Fusarium oxysporum f. sp. cumini and Macrophomina phaseolina in arid soils

S. Lodha 215

Evaluation of antagonistic strains of Fusarium spp. in the biological and integrated control of Fusarium wilt in cyclamen

A. Minuto, Q. Migheli and A. Garibaldi 221

Prospects for integrated control of 'bayoud' (Fusarium wilt of the date palm) in Algerian plantations R.A. Brac de la Perrière, H. Amir and N. Bounaga 227

Deposition and efficiency of herbicide sprays in sugar beet with twin-fluid, low-drift and conventional hydraulic nozzles

E. Nordbo, J.K. Steensen and E. Kirknel 237

DIAGNOSIS - A novel multimedia, computer-based approach to training crop protection practitioners T.W. Stewart, B.P. Blackshaw, S. Duncan, M.L. Dale, M.P. Zalucki and G.A. Norton 241

Timing of fungicide application for control of eyespot disease of winter wheat

D.R. Jones

247 Evaluation of a methyl anthranilate formulation for reducing bird damage to blueberries

J.L. Cummings, M.L. Avery, P.A. Pochop, J.E. Davis Jr, D.G. Decker, H.W. Krupa and J.W. Johnson

### Number 4 (June)

Bacterial diseases of tomato in the Czech and Slovak Republics and lack of streptomycin resistance among copper-tolerant bacterial strains K. Pernezny, V. Kůdela, B. Kokošková and I. Hládká

Effect of seed treatment chemicals on seedling emergence, establishment

and control of foot and root rot diseases of wheat in Nigeria P.S. Marley and A.A. Adeoti

Effect of MCPA and fenoxaprop on phytotoxicity, retention, foliar uptake and translocation of imazamethabenz in wild oat S.H. Liu, A.I. Hsiao, W.A. Quick, T.M. Wolf and J.A. Hume

Population dynamics and determinants of Striga hermonthica on maize and sorghum in savanna farming systems G. Weber, K. Elemo, S.T.O. Lagoke, A. Awad and S. Oikeh 283

Effect of beet yellowing viruses on light interception and light use efficiency of the sugarbeet crop K.J. de Koeijer and W. van der Werf 291

The legume pod borer, Maruca testulalis, and its principal host plant, Vigna unguiculata (L.) Walp. of selective insecticide sprays as an aid in the identification of useful levels of resistance L.E.N. Jackai 299

Field trials of pocket gopher control with cholecalciferol G.W. Witmer, G.H. Matschke and D.L. Campbell 307

Efficacy of foliar sprays of phosphates in controlling powdery mildews in field-grown nectarine, mango trees and grapevines

M. Reuveni and R. Reuveni The border effect of soil solarization A. Grinstein, G. Kritzman, A. Hetzroni, A. Gamliel, M. Mor and J. Katan 315

In vitro relationship between dithiocarbamate residue and Stemphylium vesicarium infection on pear fruit

A. Marchi, A. Folchi, G.C. Pratella and D. Caccioni 321

Selection of Nosema pyrausta (Microsporidia: Nosematidae)infected Ostrinia nubilalis (Lepidoptera: Pyralidae) eggs for parasitization by Trichogramma nubilale (Hymenoptera: Trichogrammatidae) M.M.E. Saleh, L.C. Lewis and J.J. Obrvcki 327

Effect of cultivar mixtures on yellow rust incidence and grain yield of barley in the hills of Nepal P.M. Pradhanang and B.R. Sthapit

Weed control in sugar beet by precision guided implements R.P. van Zuydam, C. Sonneveld and H. Naber 335

## Number 5 (August)

Post-harvest fog treatment of apples: deposition patterns and control of Phlyctaena vagabunda and superficial scald P. Bertolini, A. Guarnieri and P. 345 Venturi

Annual legume green manures and their acceptability to grasshoppers (Orthoptera: Acrididae) O. Olfert, C.F. Hinks, V.O. Biederbeck, A.E. Slinkard and R.M. Weiss 349

Fungicides and insecticides applied to pelleted sugar-beet seeds — I. Dose, distribution, stability and release patterns of active ingredients A.W.M. Huijbregts, P.D. Gijssel and 355 W. Heijbroek

Fungicides and insecticides applied to pelleted sugar-beet seeds - II. Control of pathogenic fungi in soil W. Heijbroek and A.W.M. Huijbregts

Fungicides and insecticides applied to pelleted sugar-beet seeds -Control of insects in soil W. Heijbroek and A.W.M. Huijbregts

Preferences of three blackbird species for sunflower meats, cracked corn and brown rice G.M. Linz, L.A. Mendoza,

D.L. Bergman and W.J. Bleier Effect of pubescence in cowpea resistance to the legume pod borer Maruca testulalis (Lepidoptera: Pyralidae)

S. Oghiakhe 379

Evaluation of cowpea genotypes for field resistance to the legume pod borer, Maruca testulalis, in Nigeria S. Oghiakhe, L.E.N. Jackai and W.A. Makanjuola 389

Relationships between brown and false rusts and cowpea yields R. Edema and E. Adipala 395

Ranking and evaluation of field corn hybrids for resistance to blackbird damage

R.A. Dolbeer, P.P. Woronecki and T.W. Seamans 399

Chemical and cultural practices for red rice control in rice fields in Ebro Delta (Spain) M. del Mar Català Forner 405

Control of the field slug Deroceras reticulatum (Müller) (Pulmonata: Limacidae) by pesticides applied to winter wheat seed A. Ester and J.H. Nijënstein

Uptake, translocation, persistence and fate of azadirachtin in aspen plants Populus tremuloides Michx.) and its effect on pestiferous two-spotted spider mite (Tetranychus urticae Koch) K.M.S. Sundaram, R. Campbell, L. Sloane and J. Studens

Influence of spray mixture rate and nozzle size of sprayers on toxicity of profenofos and thiodicarb formulations against tobacco budworm on cotton M.A. Latheef 423

Biological control of gooseweed (Sphenoclea zeylanica (Gaertn.) with an Alternaria sp. M.O. Mabbayad and A.K. Watson

#### Number 6 (September)

Biological control potential of Dinarmus basalis (Rond.) (Hymenoptera: Pteromalidae), a larval-pupal ectoparasitoid of the pulse beetle, Callosobruchus chinensis (L.)

W. Islam and S.M.H. Kabir 439

Integrated crop management of hot pepper (Capsicum spp.) under tropical lowland conditions: Effects of rice straw and plastic mulches on crop health J.G.M. Vos, T.S. Uhan and

R. Sutarya 445

Transplant production techniques in integrated crop management of hot pepper (Capsicum spp.) under tropical lowland conditions J.G.M. Vos and N. Nurtika

Effects of particle size on starling preference for food coated with activated charcoal

L. Clark 461

Evaluation of methyl anthranilate and activated charcoal as snow goose grazing deterrents J.R. Mason and L. Clark

Timing of plowing and planting: Effects on seedcorn maggot population in soybean

R.B. Hammond

Evaluation of herbicides for weed control in Solanum aethiopicum L. (Scarlet eggplant) at Samaru, Nigeria

L. Aliyu and S.T.O. Lagoke Sugarcane recovery from spring stand losses associated with simulated insect feeding as influenced by soilapplied herbicides W.H. White and E.P. Richard, Jr.

483

Cynodon dactylon: An alternative host for Sporisorium sorghi, the causal organism of sorghum covered smut P.S. Marley

Soilborne pathogens in vegetable double-crop with conservation tillage following winter cover crops D.R. Sumner, S.C. Phatak, J.D. Gay, R.B. Chalfant, K.E. Brunson

and R.L. Bugg 495 Mechanisms of resistance to the red sunflower seed weevil in sunflower accessions

G.J. Brewer and L.D. Charlet

Vegetation management for reducing mortality of ponderosa pine seedlings from Thomomys spp. R.M. Engeman, V.G. Barnes, Jr., R.M. Anthony and H.W. Krupa

Choosing crop cultivars and cultivar mixtures under low versus high disease pressure: A case study with wheat

C.C. Mundt, L.S. Brophy and M.S. Schmitt

Evaluation of selected methods of plant disease diagnosis M.L. Putnam 517

Exploring ecological control of Chara P. Guha

#### Number 7 (November)

Influence of duration of infestation by cowpea aphid (Aphididae) on growth and yield of resistant and susceptible cowpeas

I.B. Annan, G.A. Schaefers and W.M. Tingey 533

The potential for the biological control of basal rot of Narcissus by Streptomyces sp. L.H. Hiltunen, C.A. Linfield and J.G. White 539

J.G. White

SEMAGI - an expert system for weed control decision making in sunflowers A.J. Castro-Tendero and L. García-543 Torres

Effect of spray volume, spray pressure and adjuvant volume on efficacy of sethoxydim and fenoxaprop-p-ethyl P.M. McMullan

Alternative techniques for the application of sulphur dust to cashew trees for the control of powdery mildew caused by the fungus Oidium anacardii in Tanzania D.N. Smith, W.J. King, C.P. Topper, F. Boma and J.F. Cooper 555

Methods of infestation of sorghum lines for the evaluation of resistance to the maize weevil, Sitophilus zeamais Motschulsky (Coleoptera: Curculionidae)

P.I. Larrain, J.E. Araya and J.D. Paschke 561

The role of public policy in implementing IPM O.A. Ramirez and J.D. Mumford

The potential of several species of terrestrial Sciomyzidae as biological control agents of pest helicid snails in Australia

J. Coupland and G. Baker Population dynamics of Frankliniella species (Thysanoptera: Thripidae) thrips and progress of spotted wilt in tomato fields H. Puche, R.D. Berger and J.E.

Funderburk 577 Blue jay and fox squirrel damage preference among pecan trees J.G. Huggins

The effect of coffee leaf rust on foliation and yield of coffee in Papua New Guinea

J.S. Brown, J.H. Whan, M.K. Kenny and P.R. Merriman

Some problems associated with the analysis of the costs and benefits of pesticides R.G. Bowles and J.P.G. Webster

593

Cross protection of cantaloupe with a mild strain of zucchini yellow mosaic virus: effectiveness and application T.M. Perring, C.A. Farrar, M.J. Blua, H.L. Wang and D. Gonsalves 601

#### Number 8 (December)

Management of 1,3-dichloropropene in pineapple for efficacy and reduced volatile losses

R.C. Schneider, B.S. Sipes, C.H. Oda, R.E. Green and D.P. Schmitt 611

Effects of insecticides applied to control cucumber beetles (Coleoptera:

Chrysomelidae) on watermelon yields R.E. Foster and G.E. Brust

Effects of herbicide-induced habitat alterations on blackbird damage to sunflower

G.M. Linz, D.L. Bergman, H.J. Homan and W.J. Bleier

Plants used in controlling the potato tuber moth, Phthorimaea operculella (Zeller)

G.P. Das 631

Natural enemies of the bagworm, Metisa plana Walker (Lepidoptera: Psychidae) and their impact on host population regulation M.W. Basri, K. Norman and A.B. Hamdan 637

Integrated control of root-knot disease in three crop plants using chitin and Paecilomyces lilacinus N. Mittal, G. Saxena and

K.G. Mukerji 647

A study on soil solarization and combined with fumigant application to control Phytophthora crown blight (Phytophthora capsici Leonian) on peppers in the East Mediterranean region of Turkey S. Yücel 653

Leaf inoculation as an early screening test for cocoa (Theobroma cacao L.) resistance to Phytophthora black pod disease

S. Nyassé, C. Cilas, C. Herail and G. 657 Blaha

The effect of fungicides on sugar beet infected with beet mild yellowing

H.G. Smith, M.J.C. Asher, G.E. Williams and P.B. Hallsworth

The effect of temperature on the development of epidemics of coffee leaf rust in Papua New Guinea J.S. Brown, M.K. Kenny, J.H. Whan and P.R. Merriman 671

Relationship between leaf injury and colonization of cabbage by Sclerotinia sclerotiorum

H.R. Dillard and A.C. Cobb 677 Treatment decisions based on egg scouting for tomato fruitworm, Helicoverpa zea (Boddie), reduce insecticide use in tomato G.W. Zehnder, E.J. Sikora and W.R. Goodman 683

## **Author index**

Adeoti, A. A. 271 Adipala, E. 395 Aliyu, L. 479 Allsopp, P. G. 69 Aloi, C. 105 Amir, H. 227 Anders, M. M. 37 Annan, I. B. 533 Anthony, R. M. 505 Araya, J. E. 561 Archer, T. L. 165 Asher, M. J. C. 665 Auld, B. A. 193 Avery, M. L. 257 Awad, A. 283

Baker, G. 573 Barbosa, P. 3 Barnes, Jr, V. G. 505 Barney, R. J. 159 Basri, M. W. 637 Belant, J. L. 171 Benrey, B. 3 Berger, R. D. 577 Bergman, D. L. 375, 625 Bertolini, P. 345 Biederbeck, V. O. 349 Blackshaw, B. P. 241 Blaha, G. 657 Bleier, W. J. 375, 625 Blua, M. J. 601 Boma, F. 555 Bounaga, N. 227 Bowles, R. G. 593 Brac de la Perrière, R. A. 227 Brewer, G. J. 501 Brophy, L. S. 509 Brown, J. S. 589, 671 Brunson, K. E. 495 Brust, G. E. 619 Bugg, R. L. 495 Bull, R. M. 69 Butler, R. 19 Bynum Jr, E. D. 165

Caccioni, D. 321 Cadogan, B. L. 31 Campbell, D. L. 307 Campbell, R. 415 Cao, Rou-Bin 187 Cardwell, K. F. 199 Castro-Tendero, A. J. 543 Catling, H. D. 57 Chalfant, R. B. 495 Charlet, L. D. 501 Cheke, R. A. 91 Cilas, C. 657 Clark, L. 461, 467 Cobb, A. C. 677 Coll, M. 3 Cooper, J. F. 137, 555 Coppen, G. D. A. 137 Coupland, J. 573 Cummings, J. L. 257

Dale, M. L. 241
Davis Jr, J. E. 257
de Koeijer, K. J. 291
Decker, D. G. 257
del Mar Català Forner, M. 405
Dillard, H. R. 677
Dobson, H. M. 137
Dolbeer, R. A. 171, 399
Duncan, S. 241
Duriat, A. S. 205

Edema, R. 395 Elad, Y. 105 Elemo, K. 283 Emechebe, A. M. 109 Engeman, R. M. 505 Ester, A. 409

Fang, W. 193 Farrar, C. A. 601 Folchi, A. 321 Forney, C. F. 131 Foster, R. E. 619 Funderburk, J. E. 577

Gabrey, S. W. 171
Gamliel, A. 315
García-Torres, L. 543
Garibaldi, A. 221
Gay, J. D. 495
Gijssel, P. D. 355
Gonsalves, D. 601
Goodman, W. R. 683
Green, R. E. 611
Grichar, W. J. 111
Grinstein, A. 315
Guarnieri, A. 345
Guha, P. 527
Gullino, M. L. 105

Hallsworth, P. B. 665 Hamdan, A. B. 637 Hammond, R. B. 471 Hanafi, A. 145 Hardin, M. R. 3 Heijbroek, W. 355, 363, 367 Herail, C. 657 Herr, L. J. 179 Hetzroni, A. 315 Hiltunen, L. H. 539 Hinks, C. F. 349 Hislop, E. C. 19 Hládká, I. 267 Homan, H. J. 625 Hooper, G. H. S. 27 Hoyt, G. D. 75 Hsiao, A. I. 275 Huggins, J. G. 585 Huijbregts, A. W. M. 355, 363, 367 Hume, J. A. 275 Hyakumachi, M. 123

Islam, W. 439 Islam, Z. 57 Isman, M. B. 51 Jackai, L. E. N. 299, 389 Johnson, J. W. 257 Jones, D. R. 247

Kabir, S. M. H. 439 Kageyama, K. 123 Katan, J. 315 Kenny, M. K. 589, 671 King, W. J. 555 Kirknel, E. 237 Klein, T. A. 193 Kokošková, B. 267 Kritzman, G. 315 Krupa, H. W. 257, 505 Kůdela, V. 267

Lagoke, S. T. O. 283, 479 Lamp, W. O. 3 Larrain, P. I. 561 Latheef, M. A. 423 Lewis, L. C. 327 Li, Hong-Ye 187 Linfield, C. A. 539 Linz, G. M. 375, 625 Liu, S. H. 275 Lodha, S. 215

Mabbayad, M. O. 429 Macharia, C. 155 Majchrowicz, I. 81 Makanjuola, W. A. 389 Marchi, A. 321 Marley, P. S. 271, 491 Mason, J. R. 467 Matschke, G. H. 307 McGill, N. G. 69 McMullan, P. M. 549 Meera, M. S. 123 Mendoza, L. A. 375 Merriman, P. R. 589, 671 Migheli, Q. 221 Minuto, A. 221 Mittal, N. 647 Mohan Reddy, L. 37 Mor, M. 315 Mu, Yong-Tan 187 Muhamad, R. 117 Mukerji, K. G. 647 Mumford, J. D. 565 Mundt, C. C. 509 Mungo, C. M. 199

Naber, H. 335 Nealis, V. G. 31 Nijënstein, J. H. 409 Nordbo, E. 237 Norman, K. 637 Norton, G. A. 241 Nurtika, N. 453 Nyassé, S. 657

Obrycki, J. J. 327 Oda, C. H. 611 Ofuya, T. I. 47 Oghiakhe, S. 379, 389 Oikeh, S. 283 Olfert, O. 349 Onken, A. B. 165

Paschke, J. D. 561 Peffley, E. B. 155 Pernezny, K. 267 Perring, T. M. 601 Phatak, S. C. 495 Pochop, P. A. 257 Poprawski, T. J. 81 Pradhanang, P. M. 331 Pratella, G. C. 321 Price, B. D. 159 Puche, H. 577 Putnam, M. L. 517

Quick, W. A. 275

Radcliffe, E. B. 145 Ragsdale, D. W. 145 Rakotonandrasana, A. 137 Rameshwar Rao, V. 37 Ramirez, O. A. 565 Reuveni, M. 311 Reuveni, R. 311 Richard Jr, E. P. 483 Rij, R. E. 131 Roderick, G. K. 3

Saleh, M. M. E. 327

Saxena, G. 647 Schaefers, G. A. 533 Scherer, R. 137 Schmitt, D. P. 611 Schmitt, M. S. 509 Schneider, R. C. 611 Seamans, T. W. 171, 399 Sedlacek, J. D. 159

Shivanna, M. B. 123 Shtienberg, D. 105 Siddiqui, M. 159 Sikora, E. J. 683 Sipes, B. S. 611 Slinkard, A. E. 349 Sloane, L. 415 Smith, D. N. 555 Smith, H. G. 665 Sonneveld, C. 335 Spurgin, P. A. 27 Steensen, J. K. 237 Stewart, T. M. 241 Sthapit, B. R. 331 Studens, J. 415

Tingey, W. M. 533 Topper, C. P. 555 Tucker, M. R. 91

Sumner, D. R. 495

Sutarya, R. 445

Sundaram, K. M. S. 415

Uhan, T. S. 445

van der Werf, W. 291 van Frankenhuyzen, K. 31 van Zuydam, R. P. 335 Venturi, P. 345 Vos, J. G. M. 205, 445, 453

Wang, H. L. 601 Watson, A. K. 429 Way, M. J. 117 Weber, G. 283 Webster, J. P. G. 593 Weiss, R. M. 349 Wendt, C. W. 165 Western, N. M. 19 Whan, J. H. 589, 671 White, J. G. 539 White, W. H. 483 Wightman, J. A. 37 Williams, G. E. 665 Witmer, G. W. 307 Wolf, T. M. 275 Woronecki, P. P. 399

Xie, Y. 51

Yücel, S. 653

Zalucki, M. P. 241 Zehnder, G. W. 683

# **Keyword index**

Acalymma vittatum, 619 Action thresholds, 533 Activated charcoal, 461 Adjuvant volume, 549 Aerial spraying, 27 Aerosol, 345 African armyworm, 91 Agelaius phoeniceus, 375, 399 Air monitoring, 611 Algeria, 227

Allium cepa, 155 Alternaria, 429 Alternative agriculture, 471 Alternative host, 491 Amendments, 215 Anas platyrhynchos, 171 Animal damage, 505 Anjan-activaid, 467 Antagonism, 275 Antagonistic Fusarium spp., 221 Antibiosis, 501

Apantales fumiferanae, 31

Aphid-resistant cowpea, 47 Aphid-susceptible cowpea cultivar, 533 Aphis craccivora, 47, 533 Application, 555

Application methods, 19 Aspen plant, 415 Australia, 573 Azadirachtin, 415

Bacillus thuringiensis, 31 Bacterial speck, 267 Bacterial spot, 267

Bait preference, 375 Bangladesh, 57, 439

Barley, 331

Barrier spraying, 137 Beet mild yellowing virus, 291

Beet yellows virus, 291

Benomyl frequency and concentration, 199

Biocontrol, 123, 429 Biological control, 105, 221, 539, 573, 647

Biological control potential, 439 Bird repellent, 257

Black pod disease, 657 Blackbirds, 375, 625

Blue jay, 585 Blueberries, 257

Botryosphaeria dothidea, 187 Botrytis cinerea, 105

Brassica sp., 677 Breeding, 657 Bunching onion, 155

Callosobruchus chinensis, 439

Canopy size, 589 Cantaloupe, 601 Carbofuran, 619 Cashew, 555 Cattails, 625

Chara, 527 Charcoal, 467

Chen caerulescens, 467 Chisel injection, 611

Chitin, 647 Cholecaliferol, 307 Cicer arietinum, 37 Closterovirus, 291

Clusterbean, 215 Coccinellid predators, 47

Cocoa, 117 Cocoa tree, 657

Coffee leaf rust, 589, 671 Colletotrichum orbiculare, 193 Common grackle, 375

Competition for invasion sites, 179 Competition for nutrients, 179

Computer, 241 Computer program, 543

Conservation tillage, 495 Corn, 399 Cost, 683

Cost benefit analysis, 91, 593 Cover crops, 495

Cowpea, 199, 299, 379, 389 Critical point model, 199 Crop damage, 91, 257

Crop growth rate, 533 Crop health, 205, 453 Crop loss assessment, 199

## Keyword index

Crop performance, 453
Crop production, 453
Cross protection, 601
Cucumber, 123
Cucumber beetles, 619
Cultivar mixture, 331
Cultivar mixtures, 509
Cultural practice, 405
Cumin, 215
Cyclamen, 221
Cynodon dactylon, 491

Damage, 307, 625 Damage assessment, 291 Damage-yield relationships, 117 Date palm, 227 Deepwater rice, 57 Deposition, 237, 345 Diabrotica undecimpunctata howardi, 619 Diagnosis, 241 Diflubenzuron, 137 Dinarmus basalis, 439 Diptera, 573 Discoloration, 131 Disease control, 311 Disease diagnosis, 517 Disease level, 199 Disease resistance, 509 Dithiocarbamate, 321 Dolichogenidea metesae, 637 Droplet size spectrum, 27 Dusting, 555

Ecological control, 527
Ecology, 57
Education, 241
Efficacy, 275
Eggplant, 479
ELISA, 517
Emergent vegetation, 625
Entomopathogenic fungi, 81
Environmental economics, 593
Epidemiology, 671
Expert system, 543
Exserohilum rostratum, 271
Externalities, 593
Eyespot, 509

Farming systems, 283 Farmyard manure, 215 Fate, 415 Feeding, 349 Fenac, 483 Fertilizer, 165 Field, 193 Field resistance, 379, 389 Field spraying, 237 Firmness, 131 Foliar fertilizers, 311 Fox squirrel, 585 Fumigant, 653 Fumigation, 315 Fungal pathogens, 159 Fungicide, 187, 555 Fungicide residue, 321 Fungicides, 105, 355, 665 Fungicides in the pellet, 363 Fusarium equiseti, 271

Fusarium oxysporum f. sp. cumini, 215 Fusarium oxysporum f. sp. cyclaminis, 221 Fusarium oxysporum f.sp narcissi, 539 Fusarium wilt, 227

Genetic resistance, 657 Germination, 155 Goose, 467 Granular pesticides, 367 Grasshoppers, 349 Green manure, 349 Grit, 461 Ground cover, 291 Groundnut, 111 Growth, 155 Growth promotion, 123 Gummosis disease, 187

Habitat, 625
Hawaii, 611
Helianthus, 501
Helicoverpa armigera, 37
Helicoverpa zea, 683
Heliothis virescens, 423
Helopeltis theivora, 117
Herbicide compatibility, 81
Herbicide mixture, 275
Herbicides, 405, 479, 543
Horticultural oil, 51
Host-plant resistance, 561
Hot pepper, 205
Hymexazol, 363

Icterinae, 625 ICV-12, 533 Implementation, 565 Indonesia, 445, 453 Induced sysemic host resistance, 179 Induced systemic resistance, 123 Insect growth regulators, 137 Insect population curves, 577 Insect trapping, 577 Insect-disease interactions, 677 Insecta, 31, 349, 561 Insecticide treatment, 683 Insecticides, 3, 355 Insects, 327 Integrated control, 221, 227 Integrated crop management, 205 Integrated pest management, 37, 565 Interference, 155 IPM, 565

Japanese apricot, 187

Larus, 171
Lasiodiplodia theobromae, 187
Leaf bioassay, 657
Lepidiota picticollis, 69
Lepidopterous insects, 677
Locusta migratoria capito, 137
Low-drift nozzles, 237
lpe, 299
Luteovirus, 291
Lycopersicum esculentum, 105

Macrophomina phaseolina, 215 Macrosiphum euphorbiae, 145

Maize, 283 Malaysia, 445, 453 Maruca testulalis, 299, 379, 389 Mechanisms of biocontrol, 179 Meloidogyne incognita, 647 Methyl anthranilate, 171, 257, 467 Methyl bromide, 315 Metisa plana, 637 Metribuzin, 483 Microencapsulation, 423 Migration, 91 Migratory locust, 137 Mild strain, 601 Mildew, 555 Model, 91 Mollusca, 573 Morocco, 145 Mycoherbicide, 193, 429 Mycosphaerella graminicola, 509 Myzus persicae, 51, 145

Narcissus spp., 539
Natural enemies, 3
Natural enemies, 637
Neem, 415
Nematode control, 611
Nigeria, 389
Nitrogen, 215
No-till corn, 75
North Dakota, 375
Nosema pyrausta, 327
Nozzle angle, 549
Nucleic acid probes, 517

Oasis, 227 Oil emulsions, 193 Ostrinia nubilalis, 327

Paecilomyces lilacinus, 647 Papua New Guinea, 589, 671 Particle size, 461 Peach, 187 Pear, 321 Pecan, 585 Pediobius anomalus, 637 Pediobius imbreus, 637 Pelleted seeds, 355, 363, 367 Pepper, 653 Persistence, 415 Pest management, 159 Pest management programme, 593 Pesticides in the pellet, 355, 367 Pests, 573 Pests and diseases, 453 Phlyctaena vagabunda, 345 Phosphorus concentration, 527 Photo control, 335 Phytophthora, 657 Phytophthora capsici, 653 Plant disease, 517 Plant surface colonization, 179 PLRV, 145 Pocket gopher, 505 Policy, 565 Polymerase chain reaction, 517 Population dynamics, 283 Post-harvest treatment, 345 Potato leafroll virus, 145

Precision guidance, 335
Preference, 501
Preplant-incorporated herbicides, 75
Production constraints, 205
Profenofos, 423
Protected hosts, 179
Pseudocercosporella herpotrichoides, 509
Pseudomonas syringae pv. tomato, 267
Psychidae, 637
Pubescence, 379
Pudding, 405
Pulse beetle, 439
Pyrus communis, 321
Pythium spp., 495

#### Quiscalus quiscula, 375

Red rice, 405 Red-winged blackbird, 375, 399 Reforestation, 505 Rejex-It, 467 ReJeX-iT®, 257 Relay cropping, 495 Reniform nematode, 611 Repellent, 171, 461, 467 Resistance, 379, 399 Resistance levels, 299 Resurgence, 3 Rhizoctonia solani, 495 Rice, 429 Rodenticide, 307 Rotary atomizer, 27 Russian wheat aphid, 165

Scab severity, 199 Sciomyzid, 573 Sclerotinia rot, 677 Scouting, 683 Seed potato production, 145 Seed treatment chemicals, 271 Seedcorn maggot, 471 Septoria blotch, 509 Simulated stand loss, 483 Sitophilus zeamais, 561 Small-grain cover crop, 75 Smicronyx fulvus, 501 Snails, 573 Soil conservation, 349 Soil fungi, 363, 367 Soil pests, 367

Scab disease, 199

Soil solarization, 215, 653 Soilborne disease, 111 Soilborne pathogens, 315 Solanum aethiopicum, 479 Soluble solids, 131 Sorghum, 283 Sorghum bicolor, 561 Southern blight, 111 Soybean, 471 Spatial analysis, 577 Speed of travel, 549 Sphaceloma sp. 199 Sphenoclea zeylanica, 429 Spider mite, 415 Spodoptera exempta, 91 Sporisorium sorghi, 491 Spray pressure, 549 Spray quality, 19 Spray volume, 549 Spraying efficiency, 19 Spruce budworm, 31 Starling, 461 Stemphylium vesicarium, 321 Stored grain, 159 Streptomyces sp., 539 Striga hermonthica, 283 Sturnus vulgaris, 461 Sugar beet, 355, 363, 367, 665 Sugar-cane, 69 Sulphur, 555 Sunflower, 543, 625 Superficial scald, 345 Survival analysis, 505 Synchytrium dolichi, 395 Systemic fungicides, 311

Tall oil, 51
Techniques, 517
Temperature, 671
Terbacil, 483
Thiodicarb, 423
Thomomys, 307
Thrips, 445
Tillage, 471
Time of tillage, 471
Tobacco budworm, 423
Tomato, 683
Tomato fruitworm, 683
Toxicant, 307
Toxicity, 415
Training, 241

Translocation, 415
Trichoderma harzianum, 105
Trichogramma nubilale, 327
Trichome, 379
Triticum aestivum, 509
Twin-fluid nozzles, 237
Typha spp., 625

Uptake, 415 Uromyces vignae, 395

Variable insecticide sprays, 299
Vegetable production, 495
Vegetation management, 505
Vegetative growth, 81
Vigna unguiculata, 379, 389, 395
Virus yellows, 665
Viruses, 445
Vitis vinifera, 131

Water, 165, 171
Water depth, 527
Watermelon, 619
Weed control, 237, 335, 429, 479
Weed control economics, 543
Weed inhibition, 155
Weeds, 215
Weight loss, 131
Wetland management, 625
Wetting-drying, 527
Wheat, 165, 271, 509
Whitegrub, 69
Wildlife damage, 585
Wound healing, 677

Xanthium spinosum, 193 Xanthocephalus xanthocephalus, 375 Xanthomonas campestris pv. vesicatoria, 267

Yellow rust, 331 Yellow stem borer, 57 Yellow-headed blackbird, 375 Yield, 445, 589, 619 Yield loss, 395 Yield loss model, 291

Zea mays, 399 Zoysiagrass rhizosphere fungi, 123 Zucchini yellow mosaic virus, 601